

ABSTRACT

A process for producing hexafluoroethane, comprising  
5 a step of distilling a crude hexafluoroethane containing  
chlorine compounds each having two carbon atoms to  
distill out hexafluoroethane as a top flow from the top  
of a distillation column and separate a hexafluoroethane  
mixture containing the chlorine compounds as a bottom  
flow from the bottom, and a step of contacting the bottom  
10 flow with hydrogen fluoride in the gas phase at a  
temperature of 300 to 500°C in the presence of a  
fluorination catalyst to fluorinate the chlorine  
compounds. This process provides hexafluoroethane which  
can be used mainly as a cleaning gas in the production  
15 process of a semiconductor device.